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EDITORIAL.

EDITORS, E. D. COPE AND J. S. KINGSLEY.

PROFESSOR KARL VOGT, of Geneva, has been lecturing the naturalists, in the *Revue Scientifique*. Like a good blade he cuts both ways, for having hewed the theological Agag in pieces, he now reminds his fellow-workers that they, too, are no better than they ought to be. He quotes, with approval, the assertion of a modern author, that "in the early days of science the Creator dictated the laws; later, this function was attributed to nature; but now M. M. the naturalists have assumed the duty with much enthusiasm." Prof. Vogt's polemic is directed against the dogma promulgated by Agassiz, and which was then used by Haeckel as one of the foundations of the evolution hypothesis, that the embryologic and paleontologic records agree. He easily finds numerous examples where the earlier and primitive forms of life as revealed by paleontologic research do not agree with the embryonic stages of living types. He finds this to be true of both Vertebrata and Invertebrata, and then triumphantly asks, "Where is your fundamental biological law?"

As Prof. Vogt is no doubt aware, this is no new difficulty so far as regards the want of coincidence between the embryologic scale and that of living types. It was pointed out by Von Baer, the father of embryology. But the coincidences are so many that it was plain that an explanation had to be sought, which, if found, would harmonize the discrepancies. As long ago as 1868, in an article entitled the "Origin of Genera," the senior editor of this journal stated that explanation, and the progress of discovery has verified it, so that it is so far matter of common knowledge, that it is surprising that Prof. Vogt finds such a mare's-nest to-day. This essay showed the necessary distinction between "exact" and "inexact parallelism," and the reason for it. Haeckel has referred the same order of facts to two causes, which he termed "palinogeny" and "cænogeny." In "palinogeny" the complete phylogenetic record is preserved in the embryology (ontogeny); in "cænogeny" that record is not strictly adhered to. Now there are two kinds of "inexact parallelism." One of these is due to "cænogeny," where the record is not maintained, for various reasons.

The other kind of "inexact parallelism" exists only in the brain of the student, and this is what chiefly troubles Prof. Vogt. It is always apparent when one attempts to compare things which should not be compared.

If we compare, for instance, the embryologic record of a placental mammal with the adult non-placentals *as they now exist*, we will not get a parallel series, for the simple reason that both lines have long since abandoned their points of departure, and have added characters which were not present in their ancestors. The non-placentals are supposed with good reason to have been the ancestors of the placentals, yet the embryos of the latter, as is well known, do not possess marsupial bones nor inflected angles of the lower jaw. But it is also well known that a few existing Marsupialia do not possess either of these characters, and it is generally admitted that some of the Jurassic Mammalia resemble such Marsupialia most closely, and are probably the very ancestors for which we are looking. And so everywhere.

It was expressly pointed out in the paper mentioned, that in order to find "exact parallelism" it is necessary to compare the species which form the same single line of descent; and that in proportion as our comparisons depart from this line, by so much will the inexactitude appear. As regards the Vertebrata, it will not be long before we will be able to present several such lines, and ultimately many of them. In the lower animals the case will be more difficult as to their major characters at least, since these originated in such ancient geologic ages, and the structures themselves are generally so fragile, that some of the evidence must have been lost. "Cænogeny" is, however, most especially seen in animals with long periods of metamorphosis. Here the larva has a life of its own, subject to the same classes of stimuli as those which affect the adult. But the history of these changes, when unraveled, will present the same parallelism between the primitive and later forms of larvæ as does the adult evolution itself.—C.

SOME important extra-American explorations have been recently undertaken by our citizens. The U. S. Fish Commission steamer "Albatross," while on her way to the Pacific coast, recently conducted a series of sounding and dredging operations between the Central American coast and the Galapagos Islands, aided by

Prof. Alexander Agassiz, who accompanied the expedition. More recently Prof. G. Baur, of Clark University, has undertaken an exploration of the Galapagos, with the express object of making the fullest geological and biological researches. An expedition has been fitted out by Lieut. Peary, U.S.N., for the purpose of approaching as near to the North Pole as possible via Northern Greenland. He goes under the auspices of the Academy of Natural Sciences of Philadelphia, and is accompanied part of the way by Profs. Angelo Heilprin and Sharp, of that institution, and by Prof. Hoyt, of the Philadelphia High School. Mr. W. L. Abbott, of Philadelphia, recently returned from an extensive exploration of Central Africa, bringing with him several new vertebrates (including two antelopes) from Mount Kilimanjaro. He has recently returned, and will continue his researches.

At its last meeting the National Academy of Sciences elected two foreign associates: Prof. Karl Gegenbaur, of Heidelberg, and Dr. J. S. Stas, of Belgium. These gentlemen occupy the first rank in their respective pursuits, viz., comparative anatomy and chemistry. Their election confers honor both upon them and upon the Academy. Two vacancies existed in the membership at the time of the last meeting, but the Academy did not see its way clear to fill them, although eligible candidates were not wanting. The deaths of Hilgard, Leidy, and Le Conte have caused vacancies which will render more probable several elections next year.

Most of the Philadelphia members of the committee on reception of the International Congress of Geologists of 1892, have resigned from that body as an expression of their dissatisfaction with the change of place of holding the congress from Philadelphia to Washington, after the former had been adopted by the Bureau of the Congress. Prof. Leidy, who signed a protest against the change, has since died, and Prof. Heilprin, who did not protest, has since resigned. Prof. Lesley alone remains on the committee.

THE new Scribner's Century Dictionary has an especial value to scientific men from the care its publishers have taken to represent fully the language of modern science. The editorship of Profs. Gill and Coues guarantees its excellence from the side of biology.